What is claimed is:

1. Layered porous titanium oxide comprising an inorganic oxide as a core and titanium oxide deposited on the surface of the inorganic oxide, wherein the titanium localization index (B/A) represented by the ratio of the proportion titanium (Ti) to the sum of the constituent metal (M) of the inorganic oxide and titanium (Ti) determined by X-ray photoelectron spectroscopy (XPS) [$B = Ti_{XPS}/(Ti_{XPS} + M_{XPS})$] to the bulk mixing molar ratio of titanium (Ti) to the sum of the constituent metal (M) of the inorganic oxide and titanium (Ti) [$A = Ti/(Ti + M)$] is 1.6 or more and the titanium oxide is deposited on the suface of the inorganic oxide so as to be chemically and/or microscopically united to the inorganic oxide.

2. Layered porous titanium oxide as described in claim 1 wherein the amount of deposited titanium oxide is 13-60 mass%.

3. Layered porous titanium oxide as described in claim 1 or 2 wherein the repeat distance between crystal lattice planes of titanium oxide on the surface of the inorganic oxide is 50 Å or less.

4. Layered porous titanium oxide as described in any one of claims 1 to 3 wherein the pore sharpness degree is 50% or more.

5. Layered porous titanium oxide as described in any one of claims 1 to 4 wherein the pore volume is 0.3 mL/g or more.

6. Layered porous titanium oxide as described in any one of claims 1 to 5 wherein the specific surface area is 100 m^2/g or more.

7. Layered porous titanium oxide as described in any one of claims 1 to 6 wherein the inorganic oxide is a hydrosol, a hydrogel, a xerogel, a

hydroxide, or a hydrated oxide and the titanium oxide is deposited on this inorganic oxide.

8. Layered porous titanium oxide as described in any one of claims 1 to 7 wherein the inorganic oxide is synthesized by the pH swing operation.

9. Layered porous titanium oxide as described in any one of claims 1 to 8 wherein the inorganic oxide is at least one selected from the group of alumina, silica, magnesia, silica/alumina, silica/titania, alumina/zirconia, silica/zirconia, and silica/magnesia.

10. Layered porous titanium oxide as described in any one of claims 1 to 9 wherein the inorganic oxide is needle-shaped or column-shaped.

11. Layered porous titanium oxide as described in any one of claims 1 to 10 wherein the layered porous titanium oxide is obtained in the depositing step which comprises supplying a raw material titanium solution and a pH adjusting agent in the presence of an inorganic oxide in the pH range between the isoelectric point of titanium oxide and that of the inorganic oxide and depositing titanium oxide on the surface of the inorganic oxide.

12. Layered porous titanium oxide as described in claim 11 wherein the layered porous titanium oxide is obtained by the calcining treatment performed in the temperature range of 90-900 ℃ after the depositing step.

13. A process for producing layered porous titanium oxide comprising an inorganic oxide as a core and titanium oxide deposited on the surface of the inorganic oxide which comprises a depositing step for supplying a raw material titanium solution and a pH adjusting agent in the presence of an inorganic oxide and depositing titanium oxide on the surface of the inorganic oxide in the pH range bewteen the isoelectric point of titanium

oxide and that of the inorganic oxide.

14. A process for producing layered porous titanium oxide as described in claim 13 which comprises preparing a dispersion containing the inorganic oxide by the pH swing operation in the pH swing step before the depositing step for depositing titanium oxide on the surface of the inorganic oxide and supplying the dispersion as it is to the ensuing depositing step.

15. A process for producing layered porous titanium oxide as described in claim 13 or 14 which comprises a calcining step for performing a calcining treatment in the temperature range of 90-900℃ following the depositing step.

16. A process for producing layered porous titanium oxide as described in any one of claims 13 to 15 which comprises letting a particle growth inhibitor exist in the reaction system in the step for depositing titanium oxide on the surface of the inorganic oxide, said particle growth inhibitor containing at least one element selected from the group of silicon, phosphorus, magnesium, calcium, barium, manganese, aluminum, and zirconium.

17. A catalyst comprising the layered porous titanium oxide described in any one of claims 1 to 12.

18. A catalyst comprising the layered porous titanium oxide described in any one of claims 1 to 11 as a carrier and a catalyst metal deposited on this carrier.

19. A catalyst comprising the layered porous titanium oxide described in claim 12 as a carrier and a catalyst metal deposited on this carrier.

(57) Abstract: This invention provides layered porous titanium oxide comprising an inorganic oxide as a core and titanium oxide deposited on the surface of the inorganic oxide, wherein the titanium localization index B/A represented by the ratio of the proportion of titanium (Ti) to the sum of the constituent metal (M) of the inorganic oxide and titanium (Ti) determined by X-ray photoelectron spectroscopy (XPS) [$B = Ti_{XPS} / (Ti_{XPS} + M_{XPS})$] to the bulk mixing molar ratio of titanium (Ti) to the sum of the constituent metal (M) of the inorganic oxide and titanium (Ti) [$A = Ti/(Ti + M)$] is 1.6 or more and the titanium oxide is deposited on the surface of the inorganic oxide so as to be chemically and/or microscopically united to the inorganic oxide and also provides a process for producing the same and a catalyst comprising the same. The layered porous titanium oxide of this invention has a regulated pore structure, a large specific surface area, and excellent mechanical strength and is useful as a catalyst or a catalyst carrier.